ABSTRACT OF THE DISCLOSURE

Apparatus and methods are disclosed for determining the critical length of a conductor. In one aspect, a system may include at least one device under test (DUT) including at least one test strip of a metal under test. The test strip may be formed from a series of segments of the metal under test. The system may be configured to detect electromigration in the DUT using Blech's law. The system may be further configured to detect a rising voltage drop across the metal strips under test, and furthermore to calculate the electrical resistance change of the metal strips under electromigration testing conditions. The obtained results may be applied to ULSI design stage to improve the EM rule violation examination.